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CE

EN

EN

Operation Manual
DIN EN 1492-1 Lifting straps

Page 12 - 22




























SpanSet
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Safety

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IT * I nastri di sollevamento con guarnizioni definite vengono prodotti anche in conformità con la norma DIN EN 1492-1.

26	A	A2	A3	B										  			C	D	E	F
	[kg]	[kg]	[kg]											I1 min. [m]	I1 max. [m]					
1000				HB 1000 D1D1	HB 1000 D1D2	PB 1000 STAR DD	PB 1000 STAR D1D1	PB 1000 STAR D1D2		VW-1-1000 LS			G	H		1.4	PES/Metall			
1000									VW-1-1000 ASH						1.4	PES/Metall				
1400	1400	1400								VW-2-1400 LS						1.4	PES/Metall			
1400	1400	1400								VW-2-1400 ASH						1.4	PES/Metall			
1500				HB 1500 D1D1	HB 1500 D1D2											1.4	PES/Metall			
2000				HB 2000 D1D1	HB 2000 D1D2	PB 2000 STAR DD	PB 2000 STAR D1D1	PB 2000 STAR D1D2	PCS 2000 DD	VW-1-2000 LS						1.4	PES/Metall			
2000									VW-1-2000 ASH							1.4	PES/Metall			
2100	2100	2100										VW-4-2100 LS				1.4	PES/Metall			
2100	2100	2100										VW-4-2100 ASH				1.4	PES/Metall			
2800	2800	2800										VW-2-2800 LS				1.4	PES/Metall			
2800	2800	2800										VW-2-2800 ASH				1.4	PES/Metall			
3000				HB 3000 D1D1	HB 3000 D1D2	PB 3000 STAR DD	PB 3000 STAR D1D1	PB 3000 STAR D1D2								1.4	PES/Metall			
4000				HB 4000 D1D1	HB 4000 D1D2	PB 4000 STAR DD	PB 4000 STAR D1D1	PB 4000 STAR D1D2	PCS 4000 DD							1.4	PES/Metall			
4200	4200	4200										VW-4-4200				1.4	PES/Metall			
4200	4.200	4.200										VW-4-4200 ASH				1.4	PES/Metall			
5000				HB 5000 D1D1	HB 5000 D1D2	PB 5000 STAR DD	PB 5000 STAR D1D1	PB 5000 STAR D1D2								1.4	PES/Metall			
6000				HB 6000 D1D1	HB 6000 D1D2	PB 6000 STAR DD	PB 6000 STAR D1D1	PB 6000 STAR D1D2	PCS 6000 DD							1.4	PES/Metall			
8000				HB 8000 D1D1	HB 8000 D1D2	PB 8000 STAR DD	PB 8000 STAR D1D1	PB 8000 STAR D1D2	PCS 8000 DD							1.4	PES/Metall			
10.000				HB 10.000 D1D1	HB 10.000 D1D2	PB 10.000 STAR DD	PB 10.000 STAR D1D1	PB 10.000 STAR D1D2	PCS 10.000 DD							1.4	PES/Metall			
12.000									PCS 12.000 DD							1.4	PES/Metall			
16.000									PCS 16.000 DD					1.4	PES/Metall					
20.000									PCS 20.000 DD					1.4	PES/Metall					



Dear SpanSet customer, Thank you for purchasing SpanSet lifting straps. You have chosen a quality product that will last a long time when used as intended. This operating manual explains how to use them correctly and safely. Ask your SpanSet dealer or SpanSet application technician if you need further instructions. You can find more information on our lifting, fall protection and load protection technology and our services at www.spanset.de. The SpanSet group of companies



SpanSet lifting straps and belt strap hangers¹ are designed for commercial use. Do not use the lifting straps until you have completely read and understand the operating manual! Also, follow the general rules² for lifting loads. The operating manual must be kept for the entire period of use and passed along with the product.

Non-compliance may cause accidents, injury or even death!



Danger! Failure to comply with this important instruction may lead to improper handling! This may cause accidents, injury or even death.

Please observe the symbols on the foldout pages, which are explained under the numbers below:

- 1** Lifting straps/belt strap hangers must not be used when transporting people and/or animals, because they are not designed for this application!
- 2** Do not overload lifting straps/belt strap hangers, because they may become damaged or break!
- 3** Do not tie knots in lifting straps/belt strap hangers. This will considerably reduce strength.
- 4** Do not fasten lifting straps/belt strap hangers to a load if they are twisted. This will considerably reduce strength.
- 5** Damaged, overloaded or worn lifting straps/belt strap hangers must immediately be removed from use. Load-bearing capacity is no longer guaranteed.
- 6** Do not use lifting straps/belt strap hangers with a tilt angle of more than 60°. This will overload the lifting straps/belt strap

hangers and break them.

- 7** Do not use the lifting straps in a chain sling. The lifting straps may slide together and the load may fall.
- 8** Never simply lay lifting straps/belt strap hangers over the crane hook. The lifting straps/belt strap hangers may slide and the load may fall.
- 9** Lifting straps/belt strap hangers must not be pinched or lie one above another. This will considerably reduce strength.
- 10** Lifting straps/belt strap hangers must not be placed against sharp edges, slide over them and/or be pulled across them. The lifting strap may be severed and the load may fall down (see the definition of sharp edge¹).
- 11** Load hooks must not be loaded on the hook tip. The false load considerably reduces load capacity.
- 12** Do not put a load down on lifting straps/belt strap hangers. Lifting straps/belt strap hangers may become damaged.
- 13** Load hooks must be used only in such a way as to prevent unintentional unhooking. The load may fall.
- 14** Metal fittings (such as load hooks) must never be used in acids. This will considerably reduce strength.
- 15** During lifting, the load should never get out of control. Swinging or rotating loads may hurt buildings, machines or people, and components may fall.
- 16** Observe local occupational safety regulations and manufacturers' instructions! Following these instructions helps prevent accidents.
- 17** The opening angle of lifting strap loops must not exceed 20°. Make sure that the loop length is at least three and a half times as large as the crane hook's bearing surface "d", because otherwise the lifting strap loop's seam may tear.
- 18** Lifting straps may take on an electrostatic charge, so their use is forbidden underground and in explosive zones.

Table of Contents

- 1 Functional description and application
- 2 Safety instructions and handling

¹ A "sharp edge" means when the radius "r" of the transported goods' edge is smaller than or equal to the thickness "d" of the lifting strap or round sling.

- 3 Operating lifting straps/belt strap hangers
- 4 Inspection, maintenance, repair and end of use
- 5 Storage and cleaning
- 6 Training and important things to know

1 Functional description and application

Lifting straps/belt strap hangers are intended for slingers (authorized persons) to use for lifting loads. Lifting straps/belt strap hangers must be used as intended. The various SpanSet lifting straps/belt strap hangers can be clearly identified by their sewn label **27**¹ and accompanying documents. All modifications to lifting straps are forbidden. SpanSet lifting straps/belt strap hangers are made of reinforced synthetic fibres (e.g. polyester or polyamide). Their production is DIN EN ISO 9001 certified.

2 Safety instructions and handling



Only trained (authorized) persons may fasten loads.




When choosing and using slings, the weight and fastening method **19 20 21 22 23** must be considered. The weight, geometry, surface condition and design features of the load are crucial criteria for choosing the sling.





A sling's nominal load capacity can change depending on the fastening method. The change in load capacity is shown by the load fastening factor (M). A sling's nominal load capacity is indicated in the "simple direct" fastening method. The load fastening factor (M) for the rest of the fastening methods **19 20 21 22 23** can be found in this operating manual.





Using lifting straps/belt strap hangers with chemicals is permitted only with manufacturer approval. The necessary data include: chemical, concentration, temperature and retention time.


 Before storage and reuse, the user must clean lifting straps/belt strap hangers that have come into contact with acids, lye or other aggressive substances. Ask your SpanSet dealer or SpanSet itself about cleaning processes.


 When the temperature falls below freezing, ice crystals form in damp lifting straps/belt strap hangers and damage the fabric. This can cause loss of strength, so damp lifting straps must be dried in ventilated areas before reuse.


 Lifting straps made of polyester (PES) have a blue label, and lifting straps of polyamide (PA) have a green label. It is safe to use polyester and polyamide lifting straps within a temperature range of 40°C to +100°C. Lifting straps made of polypropylene (PP) have a brown label and can be safely used within a range from -40°C to +80°C.

 Never use lifting straps/belt strap hangers with illegible or missing labels, because missing safety instructions can lead to improper use.

 Never lift or lower the load in a jerky manner. This creates forces that can't be controlled. The lifting straps/belt strap hangers may tear or become damaged.

 If there are people in the danger zone, they must be warned that a lifting process is being performed and, if necessary, they must be removed from the area of immediate danger. It is prohibited for anyone to be under a suspended load!

 Hands and body parts must be kept away from the slings in order to prevent injury if the slings tighten.

 Plan the load's fastening, lifting and lowering process with the greatest of care before the actual lifting process. Reckless fastening can damage the load or endanger employees' life and health!



When lifting sharp-edged loads, protect lifting straps/belt strap hangers with safety tubes (e.g. secutex safety tubes or NoCut®).



For net weight of 25 kg and above, ergonomic handling of lifting straps/belt strap hangers requires technical equipment, such as pulleys.



Note that UV radiation (sunlight) may impair the properties of the sling.



Use lifting straps/belt strap hangers so that the latter may be removed without damage after the lifting process.

3 Operating lifting straps/belt strap hangers

3.1 First use

Before first use, the user must inspect the lifting straps/belt strap hangers for compliance with the order, completeness of accompanying documents (e.g. declaration of conformity and manufacturer certificate) and conformance of the data in the accompanying documents with the product labels. Upon first use, an authorized person must make a visual check and document it according to BGR 500. For this, a chart can be created or an inspection card filled out and saved. Equipping products with RFID tags and electronic documentation of commissioning, such as with IDxpert® (database), speeds up and simplifies the routine described.

3.2 Choosing the right lifting straps/belt strap hangers

Determine the load's weight by weighing or calculation! Find out the position of the load's centre of gravity from design documents or calculate it! The crane hook must be positioned perpendicularly to the load's centre of gravity, and the length and angle of the lifting straps must be determined.

20 21 Common fastening methods for lifting straps:
a) direct

- b) simple threading
- c) simple hooked on without an inclination angle
- d) simply hooked on with an inclination angle

22 Common fastening methods for using lifting straps in pairs

- a) direct **23**
- b) threaded



If more than one lifting strap is used for the lifting process, they must all be identical.



Uneven stretching of the lifting straps poses a danger of tilting the load.



With symmetrical load distribution, equal strap lengths and equal angles according to BGR 500 for a 4-strap hanger, only three straps are considered to bear load.



With asymmetrical load distribution and/or unequal angles, with 2-strap hangers, only one strap can be considered load-bearing, and with 3-strap or 4-strap hangers, only two straps can be considered load-bearing.



If lifting straps are used in pairs, use of a cross member is recommended, so that the load is distributed evenly **23**

3.3 VarioWeb lifting band shortener

VarioWeb offers continuous length adjustment of belt strap hangers. For this, VarioWeb is easily integrated into the belt strap hanger's individual straps. Then the length of the sling can be flexibly adjusted to the load and its special geometry.

- 24** 1. Flip the clamp rightward to release the harness
- 2. Adjust the lifting strap by sliding lengthwise
- 3. Flip the clamp to the left
- 4. Thread the lifting strap into the guide slot, and you're done!

3.4 Choosing the nominal load capacity

The lifting straps' nominal load capacity must be greater than or equal to the load's mass. When choosing the lifting straps, pay attention to which fastening method and with what tilt angle the lifting process is to take place, because this affects the useful load capacity of the lifting strap. The lifting strap must lie completely on the load suspension device (e.g. crane hook) and on the load.



Attention: Too strong a lateral enclosure (pinching) decreases lifting straps' load capacity.

3.5 Arranging the load

Place the lifting strap on the load in such a way that it cannot slide on the load or even off the load during the lifting process. Make sure the lifting strap does not twist or intersect with the load. Use adequate edge protection for coarse and/or sharp-edged loads¹. Make sure that the part of the load to be fastened to the lifting strap can take the force introduced during lifting.

4 Inspection, maintenance, repair and end of use

Lifting straps/belt strap hangers must be checked for defects before each use. If you detect defects, the lifting straps/belt strap hangers must be set aside. An authorized person must perform the check according to the employer's specified inspection interval, but at least once per year. Depending on the usage and operational conditions, interim inspections may also be necessary. The inspections must be documented according to BGR 500. Additionally, all metallic fittings must undergo crack inspection at least once every three years. The inspection must be done according to EN 10228 Part 1 (Magnetic powder testing - "fluxes") or Part 2 (Penetration Test).



Speed up and simplify documentation of sling inspections. With IDXpert®, SpanSet offers the right software and hardware. You can find more information at our homepage: www.spanset.de.

Lifting straps/belt strap hangers can be repaired if, for example:

- the label is missing but the manufacturer is known,
- a replaceable fitting is damaged,
- the loop reinforcement is damaged,
- or only the tube sleeve is damaged.

Repairs can be made only by the manufacturer or a manufacturer-authorized person.

Lifting straps/belt strap hangers should no longer be used if, for example:

- the label is missing and the manufacturer is unknown,
- the fabric has been damaged by acid or lye.
- the fabric has been damaged by the effects of heat (such as welding beads),
- or non-replaceable fittings have been distorted by overload or wear (bending, cutting, ground areas on the support points, etc.).

Especially if fittings show incipient cracks, lateral cracks, notches, breakage or corrosion, the affected slings must be removed from use. Never take a risk! Lifting straps/belt strap hangers can be disposed of with household waste as long as the fabric has not been contaminated with oils, raw materials, etc. If the fabric has been contaminated by chemicals, the lifting straps/belt strap hangers must be disposed of as special waste. The metal fittings must be sent for recycling.


5 Storage and cleaning

Maintenance and proper storage prolong the quality and functionality of SpanSet lifting straps/belt strap hangers. Therefore, inspect the lifting straps/belt strap hangers after each use! Damaged lifting straps/belt strap hangers must be removed from use or repaired, and soiled lifting straps/belt strap hangers must be cleaned before they are put into storage (see 2 Safety instructions and handling). Keep the lifting straps/belt strap hangers clean, dry and well ventilated, and protect them from direct sunlight and the effects of chemicals.

6 Training and important things to know

SpanSet lifting straps/belt strap hangers fully meet the requirements of BGR 500, 1492-2, EC machine guideline 2006/42/EC, as well as ZH 1/324 and BGI 556. Please note that the standards and guidelines listed are only examples. Please be aware that specific industries and applications may have special safety requirements that must be complied with. When using textile slings, observe regional occupational safety regulations, such as the rules of the professional associations in Germany. You can get more information and access sources for the regulations from your SpanSet dealer or directly from SpanSet.

Glossary:

 Language: English



Please read the operating manual and follow the warnings and safety instructions.



Attention: Special caution and attention!



Forbidden!



Information: Handling instructions.



Get the benefits of SpanSet training for your employees.

Our safety training centre regularly offers seminars in fastening, load safety and fall protection technology.

Naturally, we also train on site. Ask us, or visit the seminar website: www.spanset-seminare.de.

Benefit from the expertise of SpanSet specialists in preparing, configuring, certification, risk assessment, hazard analysis and operating manuals. You can find more information on our services at our homepage.

25 Technical data - Lifting strap types without metal

26 Technical data - Lifting strap types with metal

A¹ - ²Permissible WLL

B - ³Item description/type

C - Useful length

D - Colour

E - ⁴Safety factor (SF)

F - Material

G - Between 1.0 - 3.5 metres, depending on WLL

h - open

VW1 - 1-strap hanger with variable length setting

VW2 - 2-strap hanger with variable length setting

VW4 - 4-strap hanger with variable length setting

 **The manufacturer certificate per DIN EN 1492-1 and DIN EN 1492-2 is a part of this user manual. The relevant text passages are on a grey field.**

¹ A1 1-strap hanger, A2 2-strap hanger A3 4-strap hanger. ² WLL = working load limit = max. permissible load capacity. ³ Description = 2-ply lifting strap HB & PB with metal clamp, 4-ply lifting strap PCS with metal clamp. ⁴ Safety factor (SF) = relationship between permissible load.

EC Declaration of Conformity

pursuant to Appendix II Part A of EC Machine Directive 2006/42/EC
SpanSet GmbH & Co. KG • Jülicher Straße 49-51 • D - 52531 Übach-Palenberg

We hereby declare that the lifting strap described below, in the version we have marketed, conforms in its design and construction to the fundamental safety and health requirements of the EC Machine Directive. Any unapproved modification of the lifting strap voids this declaration. The lifting strap must be used only for the purposes described in the operating manual.

Description of lifting strap

machine:

Type: See lifting strap statement below **25 26**

Function: Load suspension device

Serial No: All serial numbers under the type description

Production year: Starting in 2013

Applicable EC Machine Directive 2006/42/EC,

directives: Electromagnetic compatibility RL 2004/108/EC

Harmonized European standards applied

DIN EN ISO 12100, DIN EN ISO 13857

National standards and technical specifications applied

DIN EN 1492-1, DIN EN 1677-1, DIN EN 1677-2, DIN EN 1677-3, DIN EN 1677-4

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15.07.2013

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